PEDIATRICS.

UNDER THE CHARGE OF

LOUIS STARR, M.D., AND THOMPSON S. WESTCOTT, M.D.,
OF PHILADELPHIA.

Cutaneous Reaction after Vaccination with Diphtheria Toxin.—B. SCHICK (*Münch. med. Woch.*, 1908, lv, 504) injected diphtheria toxin in various concentrations beneath the human skin to determine its reaction. After concentrating it to one-tenth its volume in vacuo at a temperature of 30°, he obtained a definite cutaneous reaction, which in appearance is identical with the reaction obtained after injecting tuberculin. Unless the operator knows which solution he injected, he cannot tell the difference between the two reactions. Clinically, the tuberculin reaction is not nearly so often associated with a central pustule as the diphtheria reaction; this pustule is not due to infection, since the toxin has been found perfectly sterile a number of times. The specificity of the reaction was proved by neutralizing the toxin with antitoxin in vitro and injecting this solution, without, however, producing a reaction. The same was true in all cases in which the toxin injections were preceded, by twenty-four hours, by injections of 1500 to 3000 units of antitoxin, thus immunizing the patient passively. If the antitoxin injection is made several hours later, the reaction is as often positive as negative. In cases in which the reaction followed upon the toxin-antitoxin injection it lasted but forty-eight hours, while after pure toxin injections it lasted 120 hours. This shows that the antitoxin influences not only the production of the reaction, but also the healing. Of 95 children ill with diseases other than diphtheria, 36 reacted positively, 59 negatively; of 55 ill with diphtheria, 52 reacted positively, 3 negatively. In the former instances the reaction was much less intense than in the latter. Shick explains the latter reaction by the individual predisposition of individuals toward diphtheria.

The Clinical Symptoms of the Cases of Epidemic Cerebrospinal Meningitis Admitted into Belvidere Hospital, Glasgow, during the Recent Epidemic.—Between May, 1906, and May, 1907, there were admitted to the wards of Belvidere Hospital, Glasgow, 128 bacteriologically verified cases of epidemic cerebrospinal meningitis; 55 were acute, 8 mild, 9 abortive, and 56 chronic. During the latter phase of the epidemic the cases were of a more acute type. There were 63 males, 65 females; 97 were below fifteen, 31 over fifteen years of age; of the former, 77 died, of the latter, 17; 17 of each sex recovered. W. Dow (*Lancet*, 1908, i, 768) has studied the cases collectively, and describes the symptoms thus: The symptoms of onset were usually sudden; headache, vomiting, and vertigo existed in most; sore throat preceded in many cases for several days. The physiognomy was very characteristic; cheeks flushed and even cyanosed, herpes at lips, suffused conjunctiva, rigid, stiff head and neck; Kernig's sign was nearly always present; stupor and less frequently delirium followed the onset. The skin symptoms included flushing at the commencement of the disease, pallor in advanced cases; goose-skin in chronic cases; tâche cérébrale throughout the course of the disease. The true rash was rarely present; when present, it consisted of small hemorrhages, which persisted from three to four days; it resembled the purpuric rash, but disappeared quicker; a general petechial rash was noted in 27 cases, only 1 of which recovered. Herpes, chiefly about the angles of the mouth, as in pneumonia, occurred in about 20 per cent. of the cases. Of the symptoms referable to the nervous system, pain was the most constant; the occiput, the frontal region, and the top of the head were the most constant seats of the pain. Next in frequency were the nucha and the spine. The state of mind may be one of apathy, and from this through every gradation to coma; delirium, however, was not infrequent; it varied between simple muttering and mania; it usually ceased as the pain disappeared, and thus does not mean convalescence, but rather the beginning of a chronic state. Hyperesthesia of the skin was common and intense; contraction of certain muscles was present in all cases, being most common in the posterior muscles of the neck and trunk. The plantar reflex was exaggerated in acute cases before the onset of coma; Babinski's sign was never obtained; the knee-jerks were exaggerated in acute cases before coma set in, but were absent in chronic cases. There was rapidly progressing emaciation in all chronic cases, but there were no trophic lesions. Chronic hydrocephalus was fairly common after the twentieth day; optic neuritis was associated with this. Convulsions, polyuria, and difficulties in deglutition were associated with its beginning. Convulsions were frequent in cases in children under one year of age. The pupils were contracted in delirium, dilated in coma; hippus was frequently observed; strabismus was moderately common in all stages; nystagmus was commonly observed in acute cases, occasionally in chronic; retraction of the upper eyelids occurred in hydrocephalus. The middle ear and the central auditory system were frequently affected, but Weichselbaum's organism was never isolated from the purulent discharge. Deafness was common in all cases in which recovery took place, and improvement does not result even after recovery. Taste and smell were not affected. Acute cases had a temperature range from 102° to 104°; it continued thus without remitting throughout the illness, and rose or fell before death. The pulse-rate varied greatly; it was usually accelerated, but sometimes much slowed; it was little influenced by variations in temperature. The respirations were accelerated from the beginning, usually out of all proportion to the pulse; modifications of Cheyne-Stokes breathing were noted. Vomiting occurred frequently; the appetite suffered only during the first days of the disease; the tongue was usually fairly clean; the spleen was not enlarged; the bowels were constipated; in acute cases, and especially in many of the children, there was loss of rectal control. Albuminuria was rare; glycosuria was never found; nephritis did not develop; incontinence of urine was common, particularly in children. Arthritic pain was rare; it affected chiefly the wrists, knees, and ankles; Weichselbaum's organism was obtained from the joints in only 2 cases.

Grave Chorea and its Relation to Septicemia.—B. SACHS (*Medical Record*, 1908, lxxiii, 505) reports two cases of a form of chorea, in which he considers the cause to have been a severe general infection. Chorea, like epilepsy, has become a generic term, and the cases of functional idiopathic chorea are becoming fewer every day; many have an organic basis, and quite a large number are purely infectious. Its possible infectious nature has been spoken of for the last thirty-five years, and in a number of instances microörganisms have been isolated from the blood and tissues of individuals whose death ensued in the course of chorea; in but few, however, have septic organisms been isolated from the blood of the living subject suffering from the chronic disorder. As organisms found postmortem may allow of different interpretations, it is very important, in every case of severe chorea, to make repeated blood examinations, so as to prove the presence or absence of bacteria in the blood of the patient during the earlier stages of the disease. The clinical symptoms of septicemic chorea may be summarized thus: Occurring chiefly among youthful individuals, a somewhat indefinite period of restlessness and slight twitching is followed by universal choreic movements; the jactitations are so severe that the patients have to be restrained; erosions appear all over the body; speech is difficult at an early stage, and later becomes impossible; this is due to the disturbance in the mechanism of speech and the mental condition, which may vary from mild stupor to active delirium; sleep is almost impossible, and requires large doses of hyponotics. Stupor and coma develop within a short time, and death usually supervenes shortly. High fever exists all through the condition, and a toxic erythema has been noted in the earlier stages. In Sach's first case blood examinations made during life demonstrated staphylococci; in his second case no organisms could be isolated. He suggests the following classification for chorea, omitting posthemiplegic chorea as having a definite organic basis: (1) Cases due to exhaustion of the nerve elements, no infectious cause being found; (2) cases associated with endocarditis, rheumatism, and fever; (3) chorea gravidarum; (4) senile and chronic chorea associated with arteriosclerosis, nephritis, and other degenerative changes; (5) septicemic chorea; for this group the bacterial origin has been proved without doubt. The prognosis is very grave and the treatment has thus far been unavailing.

Appendicitis during Childhood.—Appendicitis has been considered a graver and more fatal disease in children, not only by surgeons but also by pediatrists; this is due to the fact that appendicitis, like all other inflammations in children, undergoes suppuration much more quickly than in adults, and that the diagnosis is usually made much later, as children cannot localize the pain as readily; it is frequently considered a simple digestive disturbance. To help in the clearing up of the question of prognosis, W. NEUBERG (*Deut. Zeit. f. Chir.*, 1907, lxxxix, 375) has tabulated 82 cases from Kredel's clinic in Hanover, with the following results: There were 41 males and the same number of females; 9 were between one and five years of age, 32 between six and ten, and the remainder between eleven and fifteen. Abscess formation was noted in 21 cases, 19 of which were operated on, with one death; in the other two cases the abscess perforated into the bladder with recovery. Of 11 patients who developed peritonitis (in 7 the condition was diagnosticated before the operation), 10 were operated upon, with 9 deaths. Of 38 patients treated expectantly, 1 died, a case of diffuse peritonitis, in which an operation was considered a hopeless undertaking. Of the 82 patients, 46 had been admitted to the hospital, and of these, 9 died, while of the 36 seen in private practice only 1 died. Light cases of appendicitis are frequently diagnosticated as intestinal derangement in children, thus removing many cases from the statistics which would make the prognosis of the condition seem more favorable. The youngest patient with a circumscribed abscess was twenty-one months old; operation was followed by recovery. In 15 cases fecal concretions were noted. In 2 instances intestinal obstruction developed four weeks after the acute attack; the patients were respectively six and eight years old; both recovered after operation.

OBSTETRICS.

UNDER THE CHARGE OF

EDWARD P. DAVIS, A.M., M.D.,

PROFESSOR OF OBSTETRICS IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

The Anatomy of the Pelvic Floor.—Fothergill (*Jour. Obst. and Gyn. Brit. Empire*, January, 1908) contributes a well-illustrated paper upon the anatomy of the pelvic floor. He analyzes the views of anatomists who have written upon this portion of the body, and concludes essentially as follows: The so-called ligaments of the uterus lie loosely upon the subadjacent structures and have no supporting action. The broad ligament is a small part of the mesovarium or mesosalpinx. The ureterosacral and ureterovesical folds are not capable of resisting downward pressure, as is the round ligament, which is also of vestigial structure. The action of the external muscular layer of the pelvic floor is that of a sphincter rather than that of a support. The intermuscular layer of the pelvic floor is the degenerated representative of the tail muscles in the lower animals, and has largely lost its muscular action. The lower part of the levator ani acts as an adjuvant to the sphincters of the rectum and vagina. The classical descriptions of the fascia of the pelvis should be abandoned, and the fascia should be regarded as the sheaths of the muscles, the vessels, and the viscera. The internal muscular layer with its fascia forms the funnel-shaped pelvic diaphragm. This does not support the pelvic organs by its muscular action, and by virtue of its shape could not support the pelvic organs if they were not firmly attached to its sloping lateral walls. This attachment is accomplished by the fibrous sheaths of the blood-vessels and accompanying structures which supply the pelvic viscera. The most important cause of prolapse is relaxation of the perivascular sheaths. The attachments of the rectum to the back of the pelvis are distinct from the attachments of the urinogenital organs to its sides. The rectum does not descend with these organs when prolapse occurs. When the anterior rectal wall descends, forming a rectocele, it is united with the posterior vaginal wall by scar tissue, which is the result of infection during the healing of tears in the perineum.